this genus are beginning to be understood, and there is no doubt that, where the climate is suitable, few timber-trees can compare with them for rapidity of growth and excellence of wood. Popular misconceptions still, however, prevail on the subject, to some extent. Attempts to grow in tropical climates the species of temperate ones such as *Eucalyptus globulus* can only result in disappointment."

Two points of interest are recorded in connection with the botanical origin of Shiraz and Havana tobaccos. Hitherto the former has been stated, even upon the best authorities, to have been furnished by *Nicotiana persica.* It has, however, been proved from plants raised at Kew from seed of the finest Shiraz tobacco procured from Persia, to be merely a form of *Nicotiana tabacum,* the plant so largely cultivated in North America, and from which the bulk of the commercial tobacco is procured. To the same plant *N. tabacum,* var. *macrophyllum,* is attributed the Cuba and Havana kinds, which have always been described as the produce of *N. repanda,* no such species, so far as Dr. Vidal, the director of the Botanical Gardens, Manila, is aware, being found now in Cuba, either wild or cultivated.

An interesting subject is that connected with vegetable poisons, more particularly the arrow poisons. It is, as is stated, a subject "well deserving of investigation, although it has been doubted whether the ingredients employed have any really poisonous qualities." The evidence on these points is conflicting. Some of the plants from which these poisons are obtained have been promised to Kew, so that before long we shall no doubt know something more definite about them.

Altogether the Kew report is, this year, one worthy not only of perusal, but to be retained for future reference.

NOTES

WITHIN a short period Vienna has lost two of her leading scientific celebrities, von Littrow and von Ettingshausen. We regret to add to the list the name of Baron Karl von Rokitansky, the President of the Vienna Academy of Sciences, who died on July 23 at the age of seventy-four. He was born at Königgrätz, in Bohemia, February 19, 1804. After completing his medical studies at the Universities of Prague and Vienna, he became, in 1828, assistant in the Pathological Anatomical Institute at Vienna. In 1834 he accepted the chair of pathological anatomy in the University, fulfilling, in addition, the duties of prosector in the Vienna hospital, and of legal anatomist for the city. In these varied functions an enormous mass of observations was accumulated, which served as a basis for his "Lehrbuch der pathologischen Anatomie," which appeared in five volumes, 1842-1846, and has survived three editions. At this period von Rokitansky commenced a remarkable series of investigations with the microscope, which Johannes Müller, a few years previously, had introduced into physiological research. From the results of these and other lines of investigation, he rapidly won for pathological anatomy an importance which had been hitherto wanting in German schools of medicine, and caused its recognition as the foundation for all research, not only in pathological physiology, but in the whole province of medicine. The old symptomatic system of classification was replaced by a careful discriminating study of the changes brought about in individual organs by the varied forms of disease. The delicate appliances of modern science enabled him to detect a large number of new diseases, which had hitherto been classed with other diseases on account of the apparent similarity in symptoms. To the classical researches of von Rokitansky, probably more than to any other source, modern diagnosis owes its perfection. The impulse given by him was ably seconded by the contemporary medical authorities of Austria, and on the basis of the principles formulated by von Rokitansky, Hebra in dermatology, Engel in general anatomy, Oppolzer in therapeutics, and Dittrich, Schuh, and Skoda in other special departments of medicine have grounded the famous so-called Vienna-Prague school. Von Rokitansky retired from his professorship three years ago, and published at the same time his last work, "Die Defekte der Scheidewände des Herzens." His merits won for him numerous marks of distinction, and for some time past he has presided over the Imperial Academy of Sciences. He leaves behind him a son, Professor of Music at the Vienna Conservatorium.

WE have received, from the Ethnological Museum of Leipzig, a circular, signed by Drs. Magnus and Pechuël-Loesche, of great importance in reference to the much-debated question as to the development of the sense of colour in men. The object of this circular is to obtain data as to what degree uncivilised peoples perceive colours and distinguish them by names, after the manner of civilised nations. The circular contains a series of inquiries in German and English, along with a scale of colours, and a schedule in which to record the replies to the various questions. The instructions are carefully drawn up, and Drs. Magnus and Loesche intend to distribute the circular by thousands; if the instructions are strictly adhered to the result must be of great value. We believe this circular is only the first of a long series which Dr. Pechuël-Loesche is preparing with the intention of enlarging, in a systematic way, our ethnological knowledge, and especially to solve interesting psychological problems regarding uncivilised tribes. The Ethnological Museum of Leipzig has agreed to receive and take care of all the material collected, which will be at the command of any scientific inquirers who may care to make use of it. We need say nothing in support of this enterprise of Drs. Magnus and Loesche; we would simply urge upon all our readers who are in a position to lend a helping hand, either directly or through friends living abroad, to obtain a supply of the circular referred to, by applying to Dr. Pechuël-Loesche, Museum für Völkerkunde, Leipzig, Germany.

IN the year 1851 the Vienna Academy of Sciences offered a prize for determination of the "Crystalline forms of products obtained in chemical laboratories," which proved fruitful, to a remarkable extent, in crystallographic researches of much importance. More recently new problems have come up with reference to crystallisation, partly in consequence of the labours just referred to, and partly because of the new discoveries of chemistry with regard to the structure of chemical molecules. Wishing to promote research in this direction, the Academy offer a prize of 1,000fl. for "Investigation of the crystalline form of chemical substances, with special reference to homologous series and isomeric groups. A determination of the specific gravity is also desired. The carrying out of optical researches on the crystals measured is deferred for measurement by the winner of the prize." The limit of time is December 31, 1879, and the prize will be awarded in 1880. Papers to be sent in with sealed envelopes and mottoes.

PROF. TAIT is, we hear, engaged in developing for fog-signalling purposes a form of apparatus producing intense sounds with great economy of driving power, which he some time ago exhibited at the Royal Society of Edinburgh. His mechanism is, we believe, devised to produce an effect analogous to that of the drum, which is one of the most economic of noise-producing instruments.

THE commission appointed by the French Government to test the rope used by M. Giffard in the construction of his captive balloon have made their experiments. We have already said that the rope is conical, the heaviest end being uppermost, so that, if any breakage should take place, it will not be in the vicinity of the car, but close to the earth. The resistance of the smaller end has been found equal to 24,000 kilos of traction exerted by hydraulic pressure, and is smaller than anticipated. It had been suggested by Mr. Newall to employ a wire rope of his own make, which would have had a much greater resistance with a smaller weight; but the suggestion was lost, M. Giffard fearing some electric discharge might ignite the gas. The commission has given its authorisation to admit the public, but under the condition that the pressure should be limited to a quarter of the breaking-strain, viz., 8,000 kilos. The ascending-power is generally 5,000 kilos (about 12,000 lbs.). The difference left to bear the pressure of the wind will be about 5,000 lbs. for a balloon whose surface is 4 × 1,170 square yards. The breaking of the rope answers to a resistance of 50,000 lbs., or about ten lbs. per square foot of a plane; it can bear very high wind, and need fear only a tempest. Some observations have already been made by M. Tissandier, but in a somewhat rough manner. An anemometer will be constructed in the car, and its readings will be compared with the readings at the steelyard, to which the rope is attached.

ON July 26, the Council of the Paris Observatory held its quarterly meeting under the presidency of M. Dumas. Admiral Mouchez read a memoir on the most urgent reforms required for the better working of the institution. The new director insists upon the necessity of having a watch kept all night irrespective of the state of weather, for observations to be taken with the meridian circle. Such is the practice at the naval observatory of Montsouris, of which Admiral Mouchez continues to be the director. A large augmentation is required in the *personnel*, a supplementary sum of 54,000 fr. having been asked for that purpose. The Chinese ambassador visited the observatory on July 24, when a large mirror was almost instantly silvered by the Foucault process.

THE French *Journal Officiel* has published the names of those appointed by the Minister to act during three years as members of the Central Bureau of Meteorology. M. Hervé Mangon, and Admiral Mouchez have been appointed to represent the Academy of Sciences, M. Vicomte d'Arlot, sub-director of the Oriental and Chinese Department as delegate of the Foreign Office, Dr. Du Mesnil, Physician of the National Asylum of Vincennes, delegate of the Home Office; Commander Perrier, Member of the Bureau des Longitudes, to represent the War Office; M. Vice-Admiral Cloué, Director of the French Survey, representing the Ministry of Marine; M. Leon Lalanne, Engineer of the Ponts-et-Chaussées, representing the Department of Public Works; M. Cyrien Girard, Member of the Chamber of Deputies, representing the Ministry of Agriculture; M. Berthelot, Member of the Institute, representing the Ministry of Public Instruction; with General Farre, President of the Committee of Fortifications, M. Blavier, Telegraphic Engineer of the Government, to represent the French Postal Telegraphic Administration. The appointments of the officials to fill the several departments of the Central Bureau will soon be made public. It was decided that the Meteorological Bureau will leave the observatory at any cost. An hotel will be obtained for its use in the Rue de Grenelle, Saint Germain, in a part of Paris, which although not central, is at least thickly populated.

A COMMISSION, appointed by the U.S. Congress to select a new site for the Naval Observatory at Washington, held its first meeting on July 15. According to the *New York Tribune*, no money has been voted for expenses, and the Commissioners must therefore be in rather an awkward predicament. The old observatory, in which so much excellent work has been done, is in a very dilapidated condition, and we cannot believe that the U.S. Government will be so parsimonious as to allow the Washington Observatory to lose its place as one of the first institutions of the kind in the world.

AMONGST a large number of designs for the Spinoza monument at the Hague, only two were deemed suitable by the Committee; they were furnished by the sculptors, M. Fr. Hexamer, of Paris, and Herr Joseph Tüshaus, of Düsseldorf. The monument will be erected after the design of the former sculptor.

ON June 1 last, the hundredth anniversary of the foundation of the Society of Arts and Sciences at Batavia was celebrated by a large assembly of members and friends. This Society is the first learned European association which was formed upon Asiatic soil.

AT the Jardin d'Acclimatation at Paris, three enormous tortoises have recently arrived from the Seychelles. The largest of the three weighs no less than 187 kilogrammes (nearly 4 cwt.), and measures 1·17 metres in diameter (about 46 inches).

DR F. MOOK, who for some time past has been busily engaged in making excavations in different parts of Egypt, has just returned to Freiburg (Baden), with a large collection of antiquities. There is no doubt that his collection is the most complete in its special direction which has ever been brought to Europe. It contains no less than 340 skulls from the tombs of Thebes, Dendera, Abydos, and the Pyramid fields, all in the most perfect preservation. Besides these there are some eighty animal mummies, a large quantity of flint implements from Nubia and Egypt, vases, amulets, ornaments, &c. The collection is now exhibited in the University buildings at Freiburg.

WE have received from Messrs. Eberstein, of Dresden, a specimen of an interesting "walking-stick for naturalists or tourists." The stick is a perfect *multum in parvo*, and contains quite a museum of scientific instruments. The handle alone contains a compass, a double magnifying glass, or pocket microscope, and a whistle. Below it there is a thermometer on one side of the stick and a sand-glass on the other. The body of the stick is partly hollow, and in its interior holds a small bottle, which is intended to contain chloroform or ether for killing insects. Along the outside of the body there is a half-metre measure, showing decimetres and centimetres. Near the end of the stick a knife-blade may be opened, which serves for cutting off objects which cannot be reached by hand, such as aquatic plants, &c. At the extreme end a screw may hold in turn a spade (for botanists), a hammer (for geologists or mineralogists), a hatchet, or a strong spike, which would be of great use on glaciers. The whole is neatly finished in black polished wood.

THE following is the title of the essay to which the Howard Medal of the Statistical Society will be awarded in November, 1879:—"On the Improvements that have taken place in the Education of Children and Young Persons during the Eighteenth and Nineteenth Centuries." The essays to be sent in on or before June 30, 1879.

NEXT Sunday evening, August 4, from 6 to 8 P.M., is the last Sunday on which the Grosvenor Gallery will be open to the public this season. Tickets may be obtained by forwarding stamped envelope to the Hon. Sec., Sunday Society, 19, Charing Cross, S.W. More than 3,000 persons visited the Gallery on Sunday evening, July 21.

IN a paper in the last number of the *Journal* of the Statistical Society, on "Failures in England and Wales," it is pointed out, by reference to the tables in Prof. B. Stewart's papers in NATURE, vol. xvi. pp. 9, 26, and 45, that there seems to be some relation between the number of failures and sun-spot periods, just as there is between famines and the periodicity of the same solar phenomenon. Indeed, it is easy to see that this phenomenon must have a widespread influence, and in the interest of the most material commercial interests of our own and other countries, effective measures ought to be taken for its thorough investigation.

THE British Medical Association meets at Bath from August 6 to 9.

NEAR Pombonne (France) the incisor of a mastodon has just been discovered in a sand-pit at a depth of about a metre. It measures 2·95 metres in length, its base is 45 centimetres in diameter, and the whole weighs some 250 kilogrammes. The ivory at the point is particularly well preserved.

THE General Meeting of the German Anthropological Society will take place at Kiel on August 12–14. Prof. Fraas, of Stuttgart, will speak on the drawing-up of a prehistoric map of Germany; Prof. Virchow, of Berlin, on the statistics of the shapes of skulls in Germany; and Prof. Schaaffhausen, of Bonn, on the compilation of a general catalogue of all the anthropological material in Germany.

THE Geologists' Association have arranged for an excursion to the Boulonnais on August 5, and five following days, which, judging from the admirable programme, promises both pleasure and profit to those who join it.

DR. SCHLIEMANN is at Constantinople, and intends resuming his excavations in the Troad if he can obtain from the Porte fifty soldiers as a guard against robbers. From Berlin it is stated that a summary account of the German excavations at Olympia says that the number of marble objects found during the last three winters is 904; of bronzes, 3,734; of terra cottas, 904; of inscriptions, 429; and of coins, 1,270. All the more important ruins have been photographed, and the third volume of the official account is about to appear. An exhibition of all the casts taken will shortly be opened at Berlin.

THE Jardin d'Acclimatation of Paris offers, during the present year, numerous opportunities for ethnological study. The latest arrival is a party of Guachos from the Pampas of South America, consisting of six men, three women, and a child. They are accompanied by a complete collection of the animals of the Argentine Republic, and by seventeen wild horses. The capture of the horses at full gallop with the lasso forms their chief exhibition.

A SECOND edition of Hooker's standard "Student's Flora of the British Islands," has just been published by Macmillan and Co.; several emendations have been introduced.

WE alluded recently to the remarkable record of earthquakes preserved through so many centuries in Japan. Mr. Hattori, of Tokio, has lately described an ingenious seismograph, which was invented by one Choko, 1,750 years ago. It consisted of a cylinder 8 feet in height, ornamented by various characters and designs. The upper part was encircled by a series of eight dragon's heads, in the open mouth of each of which, a copper ball was lightly balanced. The interior of the cylinder was occupied by a system of rods and springs, so delicately joined that the slightest trembling of the earth would serve to push a ball from a dragon's mouth. Immediately below each dragon's head was a frog looking upward, with his mouth likewise wide open, to receive the balls. The sound of the falling ball would call attention to the phenomenon, and the direction of the earthquake would be revealed by the particular ball dropped. This seismograph correctly recorded earthquakes, which were felt strongly at a distance, but were too feeble to be noticed by the senses in the immediate vicinity.

THE African traveller, Hildebrandt, recommends strongly, in the *Korrespondenzblatt der afrik. Gesellschaft*, the use of petroleum for those travelling in the tropics, as a protection against insects. Occasional applications to the face and hands ensured entire freedom from mosquitoes, and the same method sufficed to preserve horses and cattle against the deadly attack of the Dondorobo gadfly, which so often cripples the movements of the explorer. Petroleum, likewise, protected the natural history collections of the traveller from ants, moths, &c.

THE contributors to the *Zeitschrift für wissenschaftliche Zoologie* have just completed the issue of a supplemental volume of 634 pages, following on their thirtieth volume, as a testimonial offering to Carl Theodor von Siebold on the fiftieth anniversary of his doctorate, April 22, 1878. Prof. von Siebold was for long the chief conductor of this most important journal, having now associated with him as active editor Prof. Ehlers. The festival volume is remarkable for the number and eminence of the contributors, and the importance of their contributions. There are more than twenty authors, including Haeckel, R. Leuckart, Ehlers, Oscar Schmidt, von Thering, Forel, Stiela, Weismann, Simroth, F. Leydig, Salensky, Carl Vogt, Möbius, Repiachoff, and L. Graff. Leydig on the Amphipods and Isopods, Möbius on the movements of flying fish through the air, Haeckel on the phylogeny of the Echinoderms, Flögel on the brains of insects, may be mentioned as memoirs of the most valuable kind.

MESSRS. LONGMANS have sent us vol. iv. of "Ure's Dictionary of Arts, Manufactures, and Mines," edited by Mr. Robert Hunt, F.R.S. This volume is supplementary to the preceding three, and it is apparent that an earnest attempt has been made to record all additions, improvements, and new applications of value.

WE have received from Messrs. Maclure and Macdonald the first four parts of a beautifully and faithfully executed series of Portraits of Distinguished Men, among which are the portraits of several men of science—Sir Joseph Hooker, Prof. Owen, Dr. Allen Thomson. The future parts will contain other portraits of men well known in the scientific world. Each portrait is accompanied by a suitable notice, and the work as a whole deserves hearty encouragement.

THE additions to the Zoological Society's Gardens during the past week include two Macaque Monkeys (*Macacus cynomolgus*) from India, presented by Dr. Adcock; a Burrowing Owl (*Speohyto cunicularia*) from America, presented by Dr. Geo. E. P. Nixon; a Green-winged Dove (*Chalcophaps indica*) from India, presented by Capt. Otho N. Shaw; six Common Guillemots (*Uria troile*), British Isles, presented by Sir Hew. Dalrymple, Bart.; a Common Nightingale (*Daulias luscinia*), European, presented by Mr. Gee; five Great Bustards (*Obis tarda*), a European Bearded Vulture (*Gypaëtus barbatus*), a Spanish Imperial Eagle (*Aquila adalberti*), a Bonelli's Eagle (*Nisaëtus fasciatus*), a Booted Eagle (*Nisaetus pennatus*), two Lanner Falcons (*Falco lanarius*) from Southern Spain, a Red and Blue Macaw (*Ara macao*), a Blue and Yellow Macaw (*Ara ararauna*) from South America, deposited; an Orang-outang (*Simia satyrus*) from Borneo, a Coati (*Nasua nasica*) from South America, two American Flying Squirrels (*Sciuropterus volucella*) from North America, received in exchange.

THE MOVEMENTS OF FLYING FISH THROUGH THE AIR

THESE movements form the subject of an interesting paper recently contributed by Prof. Möbius to the *Zeitschrift für wissenschaftliche Zoologie* (Band xxx., suppl., p. 343; see *Naturforscher*, June 8, 1878). From his own observations (made during a voyage to Mauritius, *viâ* Suez, and back by the Seychelles) and the observations of others, he describes the principal features of the phenomenon thus:—

The exocœti dart with great velocity out of the water without regard to the direction of the wind and the course of the waves. They do not, during their flight, make any regular fluttering